Claims

What is claimed is:

1. A method of managing memory in a distributed network having a client application program and a host channel adapter, the method comprising;

registering a buffer of memory related to the host channel adapter;

allowing the application program access to the registered buffer to perform a request; and

maintaining the buffer as registered to allow the application program to perform another request using the registered buffer.

2. A method as defined in claim 1 wherein the distributed network is a system area network.

3. A method as defined in claim 1 wherein the act of maintaining the buffer as registered comprises maintaining a list of registered buffers.

4. A method as defined in claim 3 wherein the list is a lookup table.

5. A method as defined in claim 1 further comprising:

receiving a request to free the buffer; and

de-registering the buffer so that the application program cannot use the buffer to perform a request.

6. A method as defined in claim 5 wherein the request to free the buffer is a request to change the properties of the buffer.

7. A method as defined in claim 5 wherein the act of de-registering the buffer is performed by the operating system.

8. A method as defined in claim 5 wherein the act of de-registering the buffer is not performed by the application program.

9. A method as defined in claim 1 further comprising:

evaluating whether the buffer should be de-registered; and

if the buffer should be de-registered, de-registering the buffer.

10. A method as defined in claim 9 wherein the act of evaluating whether the buffer should de-registered is performed by operating system using garbage collection techniques.

11. A method of performing a request in computer system, the method comprising:

receiving the request from an application program, wherein the request comprises information related to a buffer;

determining whether the buffer is registered;

if the buffer is not registered, registering the buffer;

allowing the application program access to the buffer to perform the request;

receiving a request to free the buffer;

determining whether the buffer is registered; and

if the buffer is registered, freeing the buffer.

12. A computer program product readable by a computer and encoding instruction for executing a computer process for performing the method acts defined in claim 9.

13. A buffer management system for use in a system area network comprising:

a buffer registration module that registers buffers upon request; and

a buffer de-registration module that de-registers buffers upon request.

14. A buffer management system as defined in claim 13 wherein a request to de-register a buffer is explicitly made by an application program.

15. A buffer management system as defined in claim 14 wherein the request to de-register a buffer is to free the buffer.

16. A buffer management system as defined in claim 14 wherein the request to de-register a buffer is to modify the properties of the buffer.

17. A system for providing an application program access to registers of a hardware adapter in a network environment, the network environment having a physical memory; the system comprising:

a kernel interface module for receiving a request to access the registers, the request having information related to a virtual address value and a length value;

a processing module for registering a buffer in memory related to the virtual address value and the length value;

a maintenance module for maintaining a record of registered buffers; and

a de-registration module for de-registering a buffer upon receipt of a request from the application program to de-register the buffer.

18. A system as defined in claim 17 wherein the kernel interface module is part of an operating system.

19. A system as defined in claim 17 wherein the registration module, maintenance module and de-registration module are part of the operating system.